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Non TSO approved

REMOTE DISPLAY TL-6824 USER MANUAL



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Record of revision

Revision	Revision Date	Description	ECO#	Insertion date	By
A	1.10.2008	Initial version	0001		Dijkman
B	2.2.2009	Language correction			Jezek
C	1.10.2009	New function added			Jezek
D	5.12.2010	New function added			Hovorka

-  **WARNING:** This product is not TSO approved as a flight instrument, therefore, the manufacturer will not be held responsible for any damage caused by its use.
-  **WARNING:** The altitude calculated by the INTEGRA is geometric height above mean sea level and could vary significantly from altitude displayed by pressure altimeters in aircraft.
-  **CAUTION:** The 3D Terrain Map supplied with INTEGRA relies on GPS data, this system is subject to changes which could affect the accuracy and performance of the INTEGRA's 3D Terrain map. The electronic chart is an aid to navigation and is designed to facilitate the use of authorized government charts, not replace them. Land and water data is provided only as a general reference to your surroundings. The positional accuracy of the land and water data is not of a precision suitable for use in navigation and it should not be used for navigation. Only official government charts and notices contain all information needed for safe navigation – and, as always, the user is responsible for their prudent use.
-  **CAUTION:** The Terrain feature is for supplemental awareness only. The pilot/crew is responsible for all terrain and obstacle avoidance using information not provided by the INTEGRA 3DTerrain feature.
-  **CAUTION:** Although the INTEGRA series are precision electronic Navigation AIDs (NAVAID), any NAVAID can be misused or misinterpreted and therefore become unsafe.
-  **CAUTION:** Use the INTEGRA at your own risk. To reduce the risk of unsafe operation, carefully review and understand all aspects of this Owner's Manual and the Flight Manual Supplement, and thoroughly practice basic operation prior to actual use. When in actual use, carefully compare indications from the INTEGRA to all available navigation sources, including the information from other NAVAIDS, visual sightings, charts, etc. For safety, always resolve any discrepancies before continuing navigation.
-  **CAUTION:** The INTEGRA -series does not contain any user-serviceable parts. Repairs should only be made by an authorized TL-elektronik service center. Unauthorized repairs or modifications could void your warranty and authority to operate this device under FCC Part 15 regulations.

- NOTE:** It is the pilot's responsibility for initial missed approach guidance in accordance with published procedure. The unit may not provide correct guidance until established on a defined leg.
- NOTE:** This device complies with Part 15 of the FCC limits for Class B digital devices. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Furthermore, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference, the user is encouraged to try to correct the interference by relocating the equipment or connecting the equipment to a different circuit than the affected equipment. Consult an authorized dealer or other qualified avionics technician for additional help if these remedies do not correct the problem. Operation of this device is subject to the following conditions:

- (1) This device may not cause harmful interference, and this device must accept any interference received, including interference that may cause undesired operation..
- (2) The INTEGRA display lenses are coated with a special antireflective coating which is very sensitive to skin oils, waxes and abrasive cleaners. It is very important to clean the screen using an eyeglass lens cleaner which is specified as safe for anti-reflective coatings and a clean, lint-free cloth.

To obtain accessories for your INTEGRA, please contact your TL-elektronic dealer. Help us better support you by completing our on-line registration form today! Registration ensures that you will be notified of product updates and new products and provides lost or stolen unit tracking. Please, have the serial number of your unit handy, connect to our web site (www.tl-elektronic.com)

) and look for our Product Registration link on the home page

TL elektronik is fully committed to your satisfaction as a customer. If you have any questions regarding the INTEGRA, please contact our customer service department.

Accessories and Packing List

The INTEGRA represents TL elektronics continued commitment to providing you with the most advanced technology available today — in an accurate, easy-to-use design suitable for all of your flying needs. Unless otherwise specified within this manual, the term “INTEGRA” applies to the TL-6524, TL-6724, TL-6624 and TL-6824. Please note that the difference between these models is indicated in the Specifications section of this manual.

Before installing and getting started with your new system, please ensure that your package includes the following items. If any parts are missing or are damaged, please contact your TL-elektronik dealer.

Standard Package:

- INTEGRA Unit
- Installation Rack
- Accessories
- User and Configuration manual
- CD with software and Installation Manual
- Warranty Card

Optional Accessories:

- Internal back-up Battery

Your aviation maintenance specialist should perform the installation and configuration of your new INTEGRA unit. The INTEGRA should be secured in the installation rack with the proper wiring connections. Be ready to answer any questions that your maintenance specialist could have about the installation such as location of antennas or any connections to other equipment in the panel.

Limited warranty

The TL elektronik company warrants this product to be free from defects in materials and manufacture for three years from the date of purchase. TL elektronik will, at its sole option, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labour. The customer is, however, responsible for any transportation costs. This warranty does not cover failures due to abuse, misuse, accident or unauthorized alteration or repairs.

THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED OR STATUTORY, INCLUDING ANY LIABILITY ARISING UNDER ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, WHICH MAY VARY FROM STATE TO STATE.

IN NO EVENT SHALL TL ELEKTRONIC BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE, OR INABILITY TO USE THIS PRODUCT OR FROM DEFECTS IN THE PRODUCT. SOME STATES DO NOT ALLOW THE EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.


To obtain warranty service, call the TL elektronik Customer Service (+420 49 548 23 92) for a returned merchandise tracking number. The unit should be securely packaged with the tracking number clearly marked on the outside of the package and sent freight prepaid and insured to a TL elektronik warranty service station. A copy of the original sales receipt is required as the proof of purchase for warranty repairs. TL elektronik retains the exclusive right to repair or replace the unit or software or offer a full refund of the purchase price at its sole discretion. SUCH REMEDY SHALL BE YOUR SOLE AND EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY.

General description

Thank you for purchasing the TL-elektronic INTEGRA. This section provides some important cautionary information and general usage instructions for this manual.


Before You Fly


We strongly recommended that you read this entire guide before attempting to use the INTEGRA in an actual flying situation. Additionally, we encourage you to spend time on the ground familiarizing yourself with the operation of the product. While first learning to use the instrument in the air, we recommend you have a backup pilot with you in the aircraft. Finally, we encourage you to keep this manual in the aircraft with you at all times. This document is designed to give you quick access to information that might be needed in flight.

 **CAUTION:** In a flying situation, it is the pilot's responsibility to use the product and the guide prudently.

OEM Installations

If your INTEGRA is installed by an OEM aircraft producer, you may find that you are unable to access some menus and settings. Some TL-elektronic distributors customize various areas of the INTEGRA firmware to maintain a consistent pilot experience and minimize INTEGRA information issues across a large number of installations. Currently, OEMs can customize access levels to the following settings on TL-elektronic systems: EMS SENSOR setup menu, fuel calibration, trim calibration, flaps calibration, GPS/NAV setup menu, screen configurations, data logging, and checklists/data panels. OEM distributors have the option of customizing some or all of these areas. Please contact your aircraft's manufacturer if you have any questions about how your unit has been customized.

 **WARNING:** TL-elektronic Avionics' products incorporate a variety of precise, calibrated electronics. Except for replacing the optional internal backup battery in INTEGRA -based products per the installation guide, our products do not contain any field/user-serviceable parts. Units that have been found to have been taken apart may not be eligible for repair under warranty. Additionally, once a TL-elektronic unit is opened up, it will require calibration and verification at our factory before it can be considered airworthy.

 **WARNING:** The INTEGRA is permanently supplied by the aircraft's power supply. Therefore, it is necessary to install a fuse to act as protection against a power surge. This will protect against the risk of fire and resulting damage to the INTEGRA and/or aircraft.

About this Guide


This guide serves two purposes. The first is to help you configure and get acquainted with the INTEGRA's many functions. The second is to give you quick access to vital information. For detailed technical and installation information, please refer to the INTEGRA Installation Manual. In the electronic (.PDF) version of this manual, page and section references in the **Table of Contents** and elsewhere act as hyperlinks taking you to the relevant location in the manual. The latest version of this manual may be downloaded from our website at www.tl-elektronik.com.

Integra iFamily® Connection

The TL elektronik iFamily® BUS

If you have multiple TL elektronik products in your aircraft, they can be networked together via the TL elektronik **iFamily®** BUS. Units networked via **iFamily®** have the ability to share information with each other. Any product's data can then be viewed on any other screen in the **iFamily®** network. For example, an EFIS has the ability to display engine monitor information if it is connected to an EMS TL-6724.

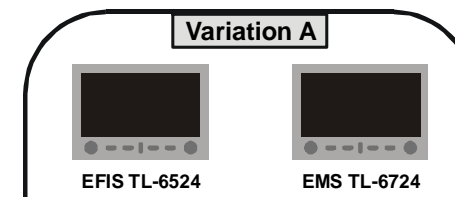
The **iFamily®** systems allows you to connect autopilot servos and remote compass.

 **NOTE:** That the failure of a unit in an iFamily® network may cause the loss of some or all data shared between units. In the example below, if the connected EMS TL-6724 were to fail, the EFIS/EMS would no longer be able to behave as an engine monitor.

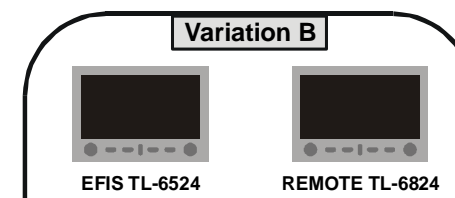
Explanation of Possible Connections

Here are a few Instrument connection Possibilities

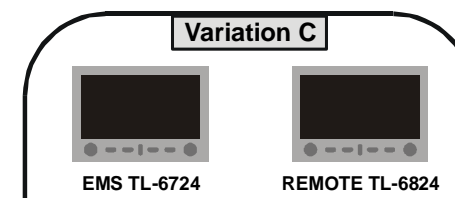
If you connect TL-6524 with TL-6724 you will be able to share the screen data between the two instruments



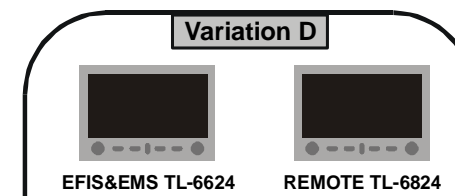
If you connect TL-6524 with TL-6824 you will be able to read the same data on TL-6824 as you have on TL-6524



If you connect TL-6724 with TL-6824 you will be able to read the same data on TL-6824 as you have on TL-6724



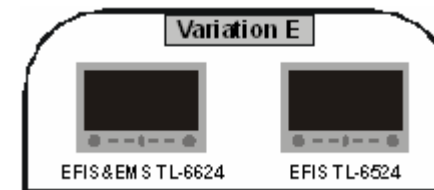
If you connect TL-6624 with TL-6824 you will be able to read the same data on TL-6824 as you have on TL-6624



Back up System Recommendation

We recommend this configuration for safe panel system redundancy: **TL 6524 and 6624**

In the case of instrument failure flight information will be available on the second instrument



Explanation of Priority setting for Data Sharing

The priority for Data Sharing is set in Setup Mode, separately for EMS data (in EMS Setup Mode) and for EFIS data (in EFIS Setup Mode). Although Setup Mode is subject of Configuration Manual, we explain priority setting of Data Sharing here to make you understand whole Data Sharing function at once.

EFIS Data Sharing:

Low Priority set

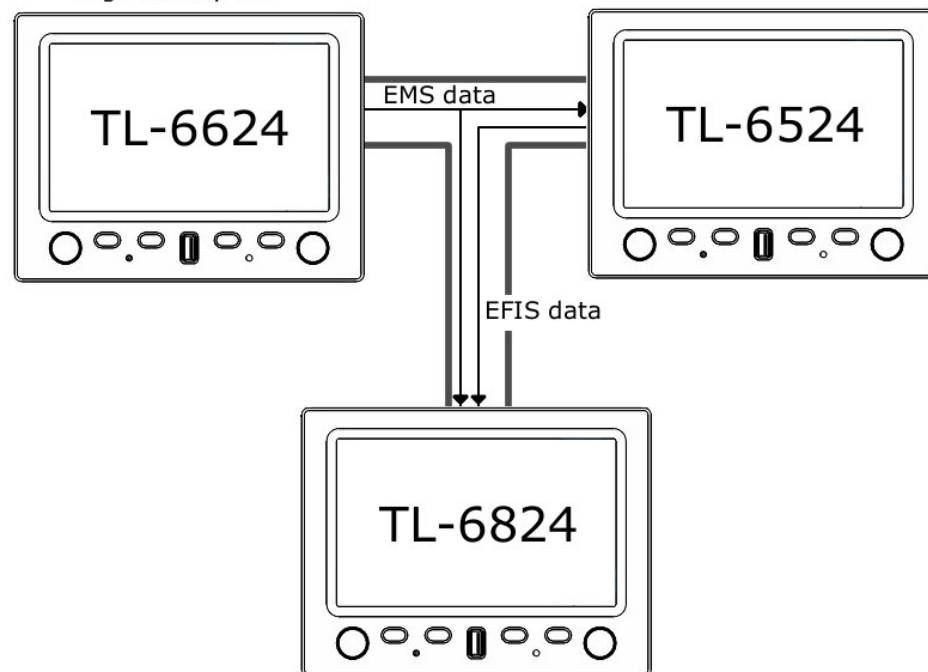
EMS Data Sharing:

Low

or

High Priority set

EFIS Data Sharing:
High Priority set



Data Sharing “Priority” means importance of specific data (EFIS or EMS data), which the Integra is sending to bus.

For example:





The picture on right side shows three Integra units connected by bus. Arrows linking the units express actual flow of information. Connection of TL-6624 and TL-6524 creates EFIS data redundancy, because both units have internal sensors for measuring EFIS data. The both units send EFIS data to the bus, because their EFIS Data Sharing is On (EFIS Data Sharing is not set to Off). EFIS data from TL-6524 takes priority over EFIS data from TL-6624 on the bus, because TL-6524 is set to higher EFIS Data Priority than TL-6624. Therefore TL-6824 receives EFIS data from TL-6524. But TL-6624 and TL-6524 displays their own EFIS data. Own data of the Integra always takes priority over data from the bus.

Because TL-6524 has no inputs for measurement of EMS data, the only way to display EMS data on the unit is to receive EMS data from TL-6624 via the bus. Therefore priority for TL-6624 EMS Data Sharing could be set to Low or High. There is no difference because this unit is only EMS data source.

TL-6824 hasn't got Data Sharing Setting. It only receives data available on the bus according to priority setting of data sources previously described. The only way to disable receiving and displaying data in standard screen is to unplug the bus from TL-6824.

The INTEGRA Glass Cockpit Instrument System

Before operation the INTEGRA, please check to see if there are any parts missing or damaged. If you have not received all the necessary components or if there are damaged components please contact TL-elektronic or your TL elektronik. dealer immediately. The INTEGRA requires a Remote Compass and GPS Receiver to provide a full range of functions.

-  **WARNING:** Obstacle clearance is not assured in 3D Terrain or Highway in the Sky (HITS) approach mode
-  **CAUTION:** If any display unit in the chain is inoperable, the display units will not be able to share information. The pilot must account for this down-graded mode of operation and expect data will not transfer between displays.
-  **NOTE:** It is highly desirable to provide each display unit with its own connection to each source of data if possible. This increases the redundancy of the system, and reduces the amount of lost function in the event a display unit becomes inoperative.
-  **NOTE:** Most, but **not all** data contained within this manual is accurate. Some differences may be observed when comparing the information in this manual to other instrument generation models.

Before You Fly

We strongly recommended that you read this entire guide before attempting to use the INTEGRA in an actual in-flight situation. Additionally, we encourage you to spend time on the ground familiarizing yourself with the operation of the product. While first learning to use the instrument in the air, we recommend you have a backup pilot with you in the aircraft. Finally, we encourage you to keep this manual in the aircraft with you at all times. This document is designed to give you quick access to information that might be needed in flight.

-  **NOTE:** While in-flight, it is the pilot's responsibility to use this product and this guide prudently.

Capabilities

The INTEGRA's robust design enables the use of a wide range of engines and sensors. You may configure the INTEGRA system to meet your monitoring requirements. The INTEGRA visual and audio warning systems give you immediate notification of any potential problem that might otherwise go unnoticed. The accurate and reliable solid-state sensors of the INTEGRA provide essential information with a user-friendly interface.

Power

The INTEGRA requires between 10 and 30 volts DC for operation and should be connected to an external backup power supply with keep-alive voltage. The INTEGRA can be turned on during engine start.

The INTEGRA can be ordered with an optional internal Li-poly backup battery which allows the instrument to continue to operate in the event of an external power failure. This lithium-polymer battery is rechargeable and its charge is maintained by the INTEGRA.

If the always-on circuit is connected, the INTEGRA continues to charge its internal battery even if the instrument is turned off. This ensures a full charge for your internal emergency battery.

Under normal conditions, the internal battery should have a voltage between 11.1 and 12.6 volts. A new fully charged internal battery is rated for a minimum 30 minute of normal operation with the INTEGRA. If the INTEGRA has switched to its internal back up battery due to external power loss, it is advisable that you land your aircraft as soon as possible.

i NOTE: Battery life is dependent on for example, the brightness of the display and number of sensors which are battery-powered etc.

Theory of Operation

The primary flight instruments on your EFIS display are generated using a group of calibrated sensors. All of them are solid state – that is, there are no moving parts. These sensors include accelerometers, which measure forces in three directions; rotational rate sensors, which sense rotation of all three axis; pressure transducers for measuring air data; and magnetometers on all three axis for measuring magnetic heading.

i NOTE: This product is intended for experimental and Light Sport Aircraft categories and is not approved for installation in Certified Aircraft.

BASIC OPERATION

Operation terminology

Term “select” in the context of Integra operation in this manual means this sequence of operation steps:

1. Highlight described menu option by rotating the knob.
2. Press the knob.

Turning the INTEGRA ON

Press the right hand knob to turn the Integra on and wait until the green backlight goes out.

i **NOTE:** The other knob and buttons are disabled when the INTEGRA is Shut Down.

Turning the INTEGRA OFF

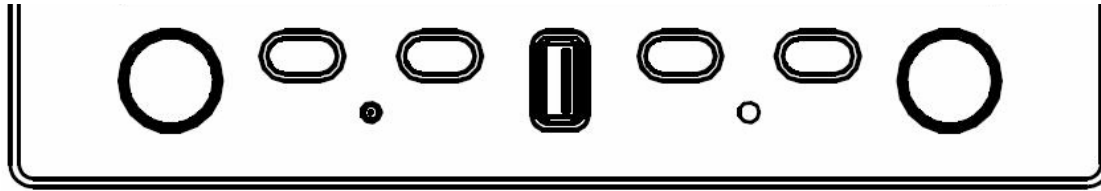
To turn off the INTEGRA and place it in Shut Down Mode

3. Press right knob.
4. Select **Power Off**

i **NOTE:** All settings and calibrations will be stored when the INTEGRA is Powered Off.

The INTEGRA Control Panel

All INTEGRA instruments function with a common control panel with a user friendly interface of 4 buttons, two knobs and a USB Data port.



INTEGRA Control Panel

Knobs

Control of all menus is really easy and simple. The two knobs have two interfaces - **press** and **rotate**. These provide particular menu options on different pages, and are used to

- scroll through menus
- adjust instrument parameters and settings

Buttons and Labels

The **Button** and **Knob Labels** will appear as white on black writing in the default mode.

The **Labels** will be highlighted once the control panel is engaged by pressing a button or turning a knob.


The **Prompt Labels** turn red to match any urgent notice appearing on the screen.

Data Port

The INTEGRA allows the pilot to enter checklists, flight plans, general information and update firmware through the USB port. This data must be verified for accuracy by the pilot prior to flight.

If you want to work with data from an external source, plug a flash disk/memory stick into the USB port. Allow 10 seconds for the Integra to read the disk. Press right knob to enter the menu and select Enter Setup. When prompt “Are you sure you want to enter to setup?” appears, press button “Yes”. Now the Integra is in Setup Mode. Button label “Data Port” is displayed. Press that button. Menu Data Port will appear containing the following:




- **Menu DATA PORT**
 - *Import Checklist*
 - *Import Configuration*
 - *Export Configuration*
 - *Export Flight Data*
 - *Export Service Log*
 - *Update Firmware*

 **NOTE:** If you can't see “Data Port” button label in Setup Mode, check correct flash disk connection.

Import Checklist	You can create your checklist on your computer and you can transfer this data into the Integra.
Import Configuration	You can create your configuration on your computer and you can copy these settings to the Integra.
Export Configuration	You can export your configuration from the Integra to your flash disk.
Export Flight Data	You can export your flight data from the Integra to your flash disk.
Export Service Log	You can export your service log from the Integra to your flash disk.

Update Firmware

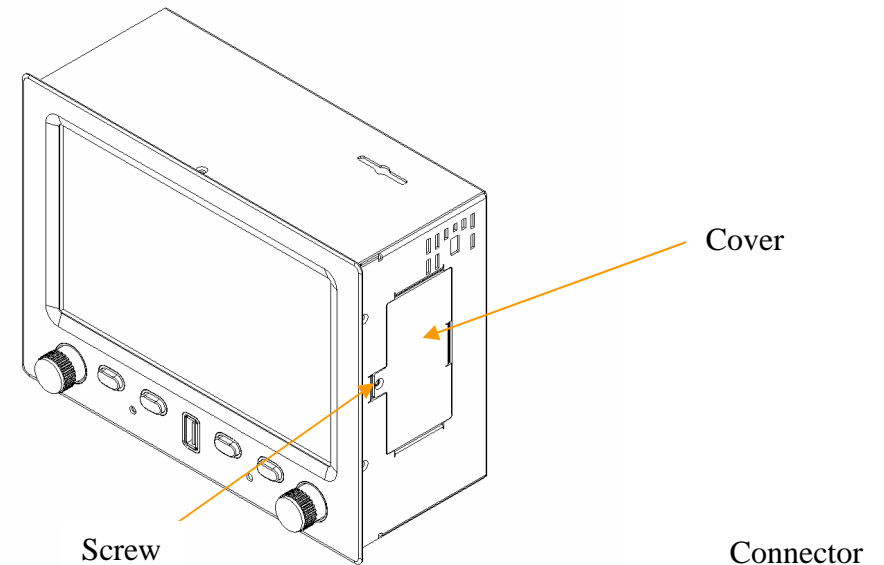
- 1) Create the TLE directory and then create the UPDATE directory inside the TLE on your flash drive. So the path will be: X:\tle\update
- 2) Copy the file “fwu.tls” to the UPDATE (on your flashdrive).
- 3) Put the flashdrive in the Integra and wait 10 seconds (flashdrive is loading).
- 4) MENU – ENTER SETUP – there will be displayed another label DATA PORT (button just by USB port). Press this button and choose UPDATE FIRMWARE.
- 5) Integra will display: "Are you sure you want to update firmware?" Press “yes”. There will be another warning message: "During operation do not power off instrument!!!" Press “OK”. The display shows you “Firmware update – Please wait while download is finished” while the firmware is loading. Do not touch any button or knob while the firmware is loading. The time for loading the firmware differs with every next firmware. The firmware loading time varies from each software upgrade package.

-  **CAUTION:** Ensure sustaining voltage during updating - if during updating fails the electric power supply, the Integra can be damaged.
-  **CAUTION:** Keep the flash drive connected with the Integra during updating.
-  **CAUTION:** This data port is intended only to be used with a flash disk. Do not try to connect it to another USB device.

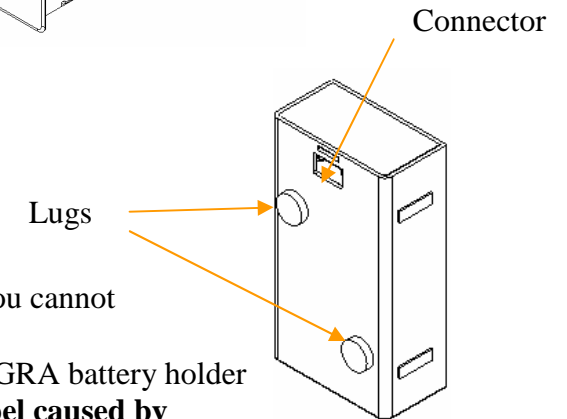
Battery Installation

⚡ WARNING: Before installing battery turn off INTEGRA.

- Remove INTEGRA from mounting rack.
- Unscrew the battery cover located on the right side of the unit.
- After screw out carefully take off a sheet metal cover.
- The cable is attached to a holder of the battery with the baling wire – this wire must be removed.



- The battery is intended to be used only with the INTEGRA. The Battery has a one connector to link it to INTEGRA and two lugs which nicely lock it to the battery holder.
- Connect the cables located in the battery holder to the Back-up battery. The connector is notched so you cannot connect this cable incorrectly to the battery.
- Put the battery in to the INTEGRA battery holder so that the lugs fit into the round holes on the INTEGRA battery holder and **the connector must be on the top. You should obey this to prevent damage of the battery cabel caused by sharp edges of the battery holder..**





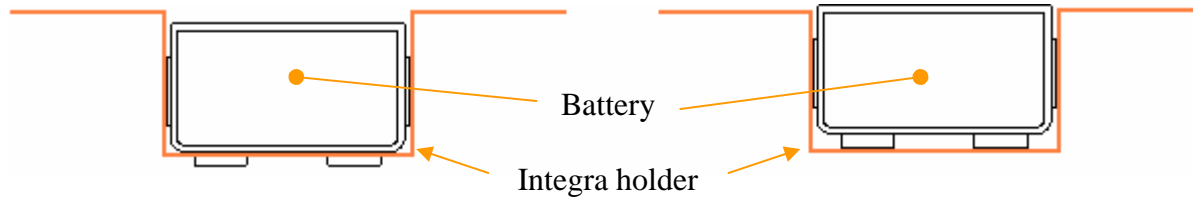
Cable for connecting INTEGRA with battery

Before screwing the cover on make sure that the battery is not protruding and is properly placed in the INTEGRA battery holder. Then screw battery cover back on to INTEGRA.

⚡ WARNING: To not apply pressure to the battery while re-installing the cover.

Correct battery installation in Integra

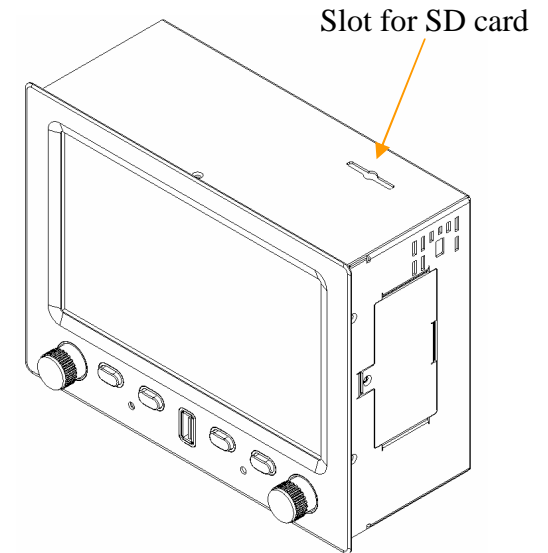
Incorrect battery installation in Integra



SD card Installation

- Turn off INTEGRA.
- Remove INTEGRA from mounting rack.
- The slot for the SD card is situated on the top right side of INTEGRA.
- Now insert SD card into the slot so that the front SD card label is facing you.
- Carefully press the card down until you feel it click.
- The SD is now installed in the INTEGRA.

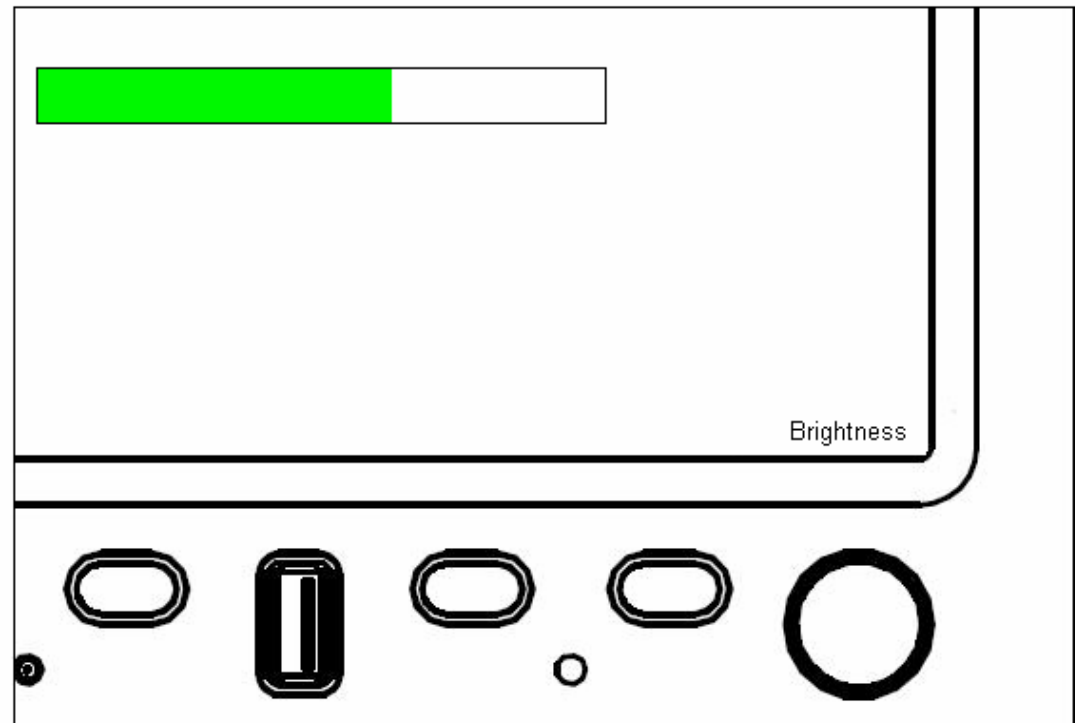
- If you want to remove the SD card, first carefully press down and the card will eject. You can then safely remove the card from the INTEGRA.



Brightness

This controls the brightness of the LCD.

Press right knob and select Brightness. Rotate the knob to choose the level of brightness.



The green strip specifies level of brightness

NOTE: This function is possible only if you have DIMMER SOURCE CONTROL (Press right knob, select Enter Setup. When prompt “Are you sure you want to enter to setup?” appears, press button “Yes”. Now the Integra is in Setup Mode. Press right knob, select Other Setting&Calibration. New menu will appear. There select Backlight Control, then select Dimmer Source Control. Finally select Manual. Now manual setting of display brightness is enabled.

Information about Battery

The INTEGRA utilizes a Lithium Polymer battery with the following characteristics:

Storage Temperature	-20° C to 60° C (-4° F to 140° F)
Recharge Life	300 - 400 cycles

A Lithium Polymer battery operates without a memory effect, meaning it can be recharged before it is completely discharged without affecting the energy capacity.

⚠ CAUTION: Keep the Battery Pack connector away from metallic objects.
Any tampering of the cell within the INTEGRA Battery Pack is strictly forbidden in any circumstances.
Do not immerse in water.
Do not place near a heat source.
Never heat the battery nor throw into a fire.
Do not expose the battery pack to temperatures in excess of 60°C (140°F).

⚠ CAUTION: The Integra Battery Pack is intended for use only with Integra Products.

Disposal Procedures:

For Ecological and Environmental reasons it is advisable to consult with local authorities for disposal regulations.

Remote Integra Display is designed for displaying all values measured by TL-6524, TL-6624 and TL-6724. (Wiring possibility with other Integra are display above). Remote Integra Display can provide information to the co-pilot or to inform other crew members. The low-profile of the TL-6824 allows it to be installed into seat backs and by giving passengers flight information and the ability to watch films or listen to music stored on a flash drive, it enriches their flight experience.

i NOTE: The TL-6824 Integra Remote Display is an auxiliary slaved system.

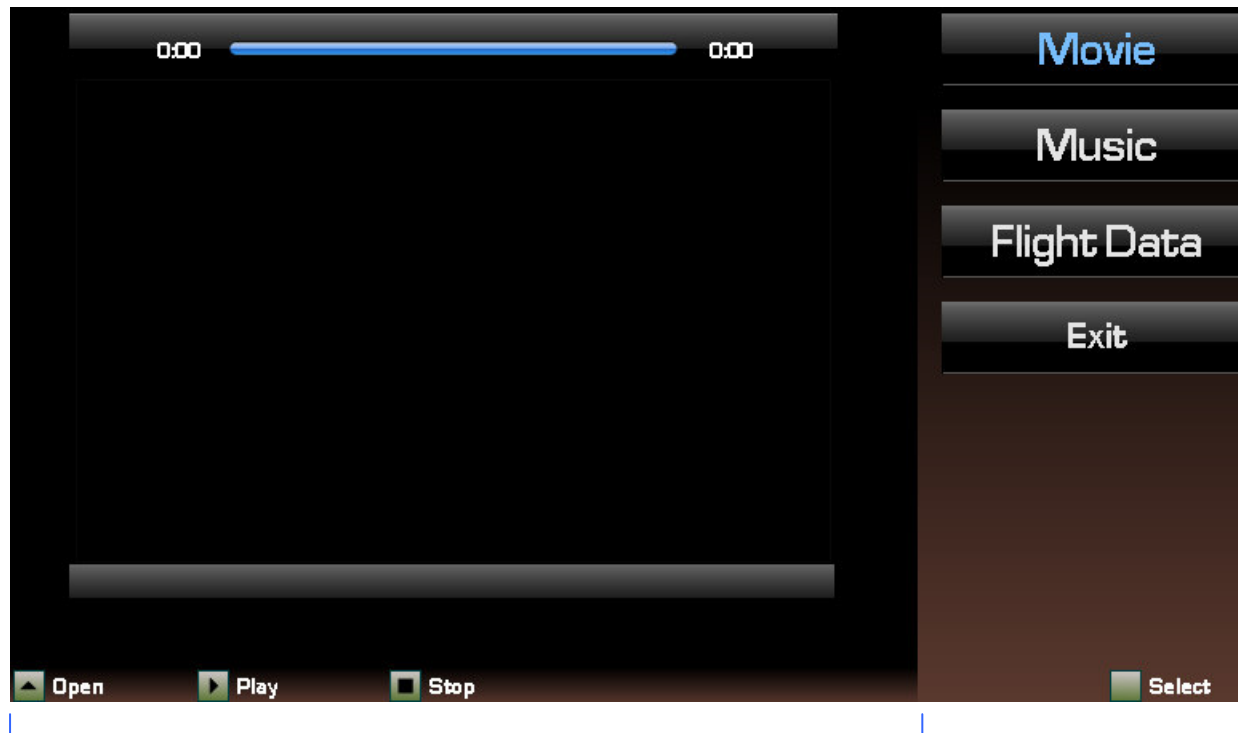
i NOTE: The TL-6824 is intended to serve as a second screen displaying information it receives from another INTEGRA EFIS and/or EMS instrument.

The operation of the TL-6824 is identical to the operation of the INTEGRA device it is paired with; please consult the USER, CONFIGURATION and INSTALLATION manual of the connected instrument for details on the correct operation of the TL-6824

Menu Entertainment

Menu Entertainment serves for access to multimedia functions of the Integra. You can listen to your favourite music or watch movies. These multimedia possibilities of the Integra enrich passengers' experience from flight.

The Integra is displaying Entertainment Screen:



Part for displaying chosen option

menu

Handling the menu

Rotate right knob for scrolling through menu. Select desired function by pressing right knob.

i NOTE: If you want to open multimedia file on plugged SD card, you won't be able to have connected USB flash drive. That's because the Integra will check primarily for connected USB flash drive. Then if USB flash drive isn't found, the Integra will check for SD card. And if SD card is not neither plugged, then the Integra will load files from internal memory.

Option Movie

Probably you want to watch some movie on your USB flash drive or SD card. To do this, follow these instructions:

Press left knob labelled "Open". Window will appear for selecting video file. There you can scroll through currently viewed directory by rotating left knob. Names of displayed subdirectories are closed in square brackets[]. Playable files are displayed with postfix ".3gp".

If you want to move down to some subdirectory, choose desired subdirectory and press left knob.

If you want to move up to the parent directory, choose item [..] and press left knob.

For replaying desired video file, just choose appropriate item and press left knob. The Integra should be replaying your video now.

For maximizing video presentation to full screen press button labeled "Maximize". For returning to previous screen, press any button.

i NOTE: The Integra only supports .3gp video format. Other files-video of different format or any other data aren't displayed in Select video file window.

elapsed time of video remaining time of video

02:11 -00:02

Movie

Music

Flight Data

Exit

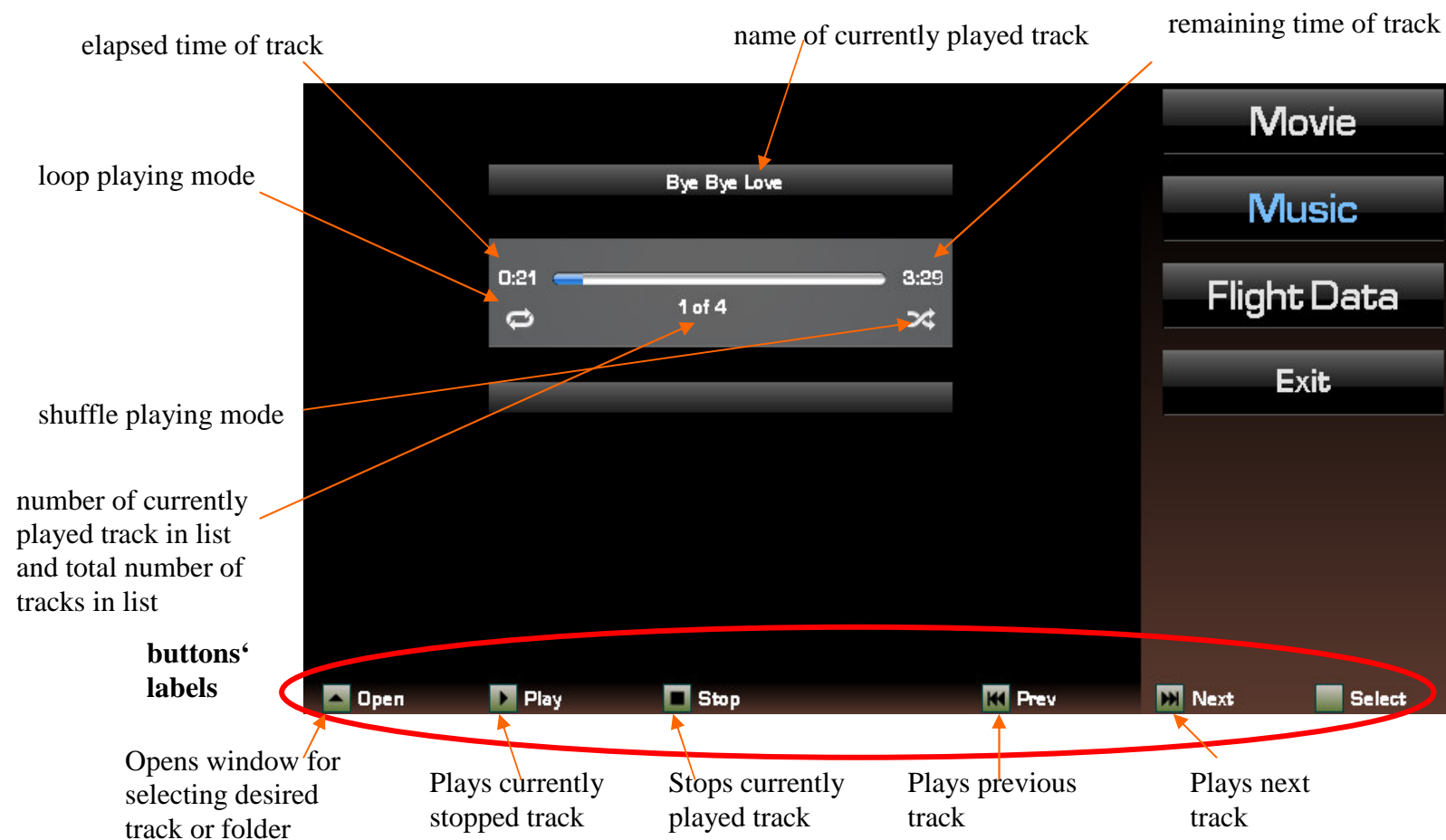
buttons' labels

Open Play Stop Prev Next Select

Opens window for selecting desired video file or folder Plays currently stopped video Stops currently played video Plays previous track Plays next track

Option Music

i NOTE: The Integra only supports MP3 audio files.



Option Flight Data

This option soothes desire for flight info of impatient and curious passengers. It displays Airspeed, Altitude and Time to arrival.



Option Exit

The option exits Entertainment Screen.

Abbreviations

ACTV— Active
ALT— Altitude
APR— Approach
APT— Airport
ARSPC— Airspace
ARTCC— Air Route Traffic Control Center
ARVL— Arrival
AUX— Auxiliary
AVGAS— Aviation-grade Gasoline
AVTN— Aviation
BARO— Barometric setting
BRG— Bearing To
°C— Degree Celsius
C/V— COM/VLOC
CAS— Calibrated Airspeed
CDI— Course Deviation Indicator
CLR— Clear
COM— Communications Transceiver
CRSR— Cursor
CTA— ICAO Control Area
CTAF— Common Traffic Advisory Frequency
CTR— Center (see ARTCC)
CUM— Cumulative
DB— Database
DEN— Density
DEP— Departure
DEPT— Departure guidance
DIS— Distance

DME— Distance Measuring Equipment
DTK— Desired Track
EFF— Efficiency
ELEV— Elevation
ENDUR—Endurance
ENR— En Route
ENT— Enter
EPU— Estimated Position Uncertainty
ESA— En Route Safe Altitude
ETA— Estimated Time of Arrival
ETE— Estimated Time En Route
°F— Degrees Fahrenheit
FAF— Final Approach Fix
FF— Fuel Flow
FIR— Flight Information Region
FLTA— Forward Looking Terrain Avoidance
FOB— Fuel On Board
FPL— Flight Plan
fpm— Feet Per Minute
FREQ— Frequency
FSS— Flight Service Station
ft— Feet
G/S— Glideslope
gl— gallons
GPS— Global Positioning System
GS— Ground Speed
HAL— Horizontal Alarm Limit
HDG— Heading

HFOM— Horizontal Figure of Merit
hg— Inches of Mercury
HPL— Horizontal Protection Level
HITS— Highway in the Sky
HWY— Highway
IAF— Intermediate Approach Fix
ID— Identifier
ig— Imperial Gallons
ILS— Instrument Landing System
IND— Indicated
INT— Intersection
INTEG— Integrity
ITI— Imminent Terrain Impact
kg— Kilograms
kHz— Kilohertz
km— Kilometers
kph— Kilometers Per Hour
kt— Knots
L/VNAV — Lateral and vertical navigation guidance, LNAV/VNAV service level
LAT/LON—Latitude/Longitude
lb— Pounds
LCL— Local
LFOB— Left-over Fuel On Board
LNAV — Lateral Navigation only
LNAV+V — Lateral Navigation with advisory vertical guidance
LOC— Localizer

LPV — Lateral Precision Performance with Vertical Guidance
LRES— Left-over Fuel Reserve Time
Lrg— Large
lt— Liters
°M— Degrees Magnetic
m— Meters
MAP— Missed Approach Point
MAHP— Missed Approach Hold Point
MAPR— Missed Approach guidance
mb— Millibars of Pressure
Med— Medium
MGRS— Military Grid Reference System
MHz— Megahertz
mi— Statute Miles
MOA— Military Operations Area
mph— Statute Miles Per Hour
mpm— Meters Per Minute
mps— Meters Per Second
MSA— Minimum Safe Altitude
MSG— Message
MSL— Mean Sea Level
mul— Multicom
NATNL— National
NAV— Navigation
NAVAID— Navigational Aid
NDB— Non-Directional Radio Beacon
NM— Nautical Miles
NRST— Nearest
NUM— Number

OBS— Omnibearing Selector
OCN— Oceanic
PDA— Premature Descent Alert
P.POS— Present Position
PROC— Procedure(s)
PROV— Province
PTK— Parallel Track
PWR— Power
RAD— Radial
RAIM— Receiver Autonomous Integrity Monitoring
REF— Reference
REQ— Required / Requirements
RESTRICTD— Restricted
RNG— Range
RTC— Required Terrain Clearance
RX— Receive
SBAS— Space-Based Augmentation System
SID— Standard Instrument Departure
Sml— Small
SPD— Speed
SQ— Squelch
SRFC— Surface
STAR— Standard Terminal Arrival Route
SUA— Special Use Airspace
SUSP— Waypoint sequencing suspended
°T— Degree True
TACAN— Tactical Air Navigation
TAS— True Airspeed
TAT— Total Air Temperature

TEMP— Temperature
TER— Terrain
TERM— Terminal
TKE— Track Angle Error
TMA— ICAO Terminal Control Area
TRANS— Transition
TRFC— Traffic
TRK— Track (also Ground Track) Angle
TRSA— Terminal Radar Service Area
TWR— Tower
TX— Transmit
UTC— Coordinated Universal Time (also GMT or “zulu”)
UTM/UPS—Universal Transverse Mercator / Universal Polar Stereographic grids
VAL— Vertical Alarm Limit
VAR— Variation
VER— Version
VFOM— Vertical Figure of Merit
VFR— Visual Flight Rules
VLOC— VOR/Localizer Receiver
VNAV— Vertical Navigation
VOL— Volume
VOR— VHF Omnidirectional Radio Range
VPL— Vertical Protection Level
VS— Vertical Speed
VSR— Vertical Speed Required
WAAS— Wide Area Augmentation System
WPT— Waypoint
WX— Weather
XTK— Crosstrack Error

Technical Parameters

Physical characteristic

Width	192 mm	7,559"
Height	148 mm	5,827"
Depth	62,5 mm	2,416"
Panel rectangle hole	185x143 mm	7,283x5,63"

Weight without battery	820 g	1,81 lb
Weight with battery	910 g	2 lb

General Specifications

Operating Temperature Range	- 20°C to +60°C
Humidity	95% non-condensing
Altitude Range	4600 meters max
Power Range	10.0 to 32.0 Volts
Max. Signalization	30 Volts, 1 Ampere
Power Consumption	0.95 Ampere @ 14VDC without sensors
Vibration	5 to 500 Hz
Show Rate (LCD Refresh)	15 fps depends on volume of information displayed

Long-term Memory and communication

Storing Rate	0.1 to 60 seconds user selectable
Memory Capacity	Scheck@method
Data Saved Endurance	30 years
Rolling Memory life-time	100 000 hours @ 1 second storing rate

Communication

RS-232c	up to 115 200 bps
USB 1.1	12 Mb/s
USB 2.0	480 Mb/s
CAN BUS	1 Mb/s

Display parameters

Resolution	800x480
Brightness	800 cd/m2

Memory card	Integra support SD and SDHC memory card
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REMOTE DISPLAY TL-6824 USER MANUAL



Part Number

TLD-6824X-DU-001_RevD

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